

What is claimed is:

1. A phase-locked loop structure providing local  
oscillator signals, said phase-locked loop structure  
5 comprising:
  - a first phase-locked loop including a first  
voltage controlled oscillator;
  - a second phase-locked loop including a second  
voltage controlled oscillator;
  - 10 a first local oscillator output for providing a  
first local oscillator signal, wherein a signal  
output by said first voltage controlled oscillator is  
forwarded to said first local oscillator output;
  - a second local oscillator output for providing a  
15 second local oscillator signal; and
  - a selection component for forwarding a signal  
output by said first voltage controlled oscillator or  
a signal output by said second voltage controlled  
oscillator to said second local oscillator output.
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2. A phase-locked loop structure according to claim 1,  
wherein said first voltage controlled oscillator is  
designed to generate signals in a first frequency  
band, wherein said second voltage controlled  
25 oscillator is designed to generate signals in a  
second frequency band, and wherein said phase-locked  
loop structure further comprises a control unit  
applying a control signal to said selection component  
which causes said selection component to forward a  
30 signal output by said first voltage controlled  
oscillator to said second local oscillator output  
whenever a second local oscillator signal having a  
frequency selected from said first frequency band is  
required and applying a control signal to said

selection component which causes said selection component to forward a signal output by said second voltage controlled oscillator to said second local oscillator output whenever a second local oscillator signal having a frequency selected from said second frequency band is required.

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3. A phase-locked loop structure according to claim 1, wherein said first voltage controlled oscillator is designed to generate signals having a first quality and said second voltage controlled oscillator is designed to generate signals having a second quality, said first quality being higher than said second quality, and wherein said phase-locked loop structure further comprises a control unit applying a control signal to said selection component which causes said selection component to forward a signal output by said first voltage controlled oscillator to said second local oscillator output whenever a second local oscillator signal having said first quality is

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required and applying a control signal to said selection component which causes said signal to said second local oscillator output by said second voltage controlled oscillator to forward a signal output by said second local oscillator to said second local oscillator output whenever a second local oscillator signal having said second quality is required.

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4. A phase-locked loop structure according to claim 1, further comprising:

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at least one control unit, which at least one control unit applies control signals to said selection component causing said selection component to alternate between forwarding a signal output by said first voltage controlled oscillator and a signal

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- 5 output by said second voltage controlled oscillator to said second local oscillator output, and which at least one control unit sets a required frequency of the signal output by a respective voltage controlled oscillator before a control signal is provided to said selection component to switch to forwarding a signal output by said respective voltage controlled oscillator to said second local oscillator output.
- 10 5. A phase-locked loop structure according to claim 1, further comprising a control unit, which control unit switches off at least one of said first voltage controlled oscillator and said second voltage controlled oscillator while said first voltage signal to one of said first local oscillator output and said second local oscillator output and while the frequencies of signals currently generated by said first voltage controlled oscillator and said second voltage controlled oscillator are closer to each other than a predetermined difference.
- 15 20 6. A communication unit comprising a transmitter chain requiring a local oscillator signal for processing signals for transmission, a receiver chain requiring a local oscillator signal for processing received signals and a phase-locked loop structure providing local oscillator signals, said phase-locked loop structure comprising:  
a first phase-locked loop including a first voltage controlled oscillator;  
a second phase-locked loop including a second voltage controlled oscillator;
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a first local oscillator output for providing a first local oscillator signal, wherein a signal output by said first voltage controlled oscillator is forwarded to said first local oscillator output;

5 a second local oscillator output for providing a second local oscillator signal; and

a selection component for forwarding a signal output by said first voltage controlled oscillator or a signal output by said second voltage controlled oscillator to said second local oscillator output;

10 wherein one of said first local oscillator output and said second local oscillator output provides a local oscillator signal to said transmitter chain and wherein the respective other one of said first local oscillator output and said second local oscillator output provides a local oscillator signal to said receiver chain.

7. A method of providing a first local oscillator signal and a second local oscillator signal, said method comprising:

20 in case said first local oscillator signal is required, using a signal provided by a first voltage controlled oscillator of a first phase locked loop as said first local oscillator signal; and

25 in case said second local oscillator signal is required, selecting a signal provided by one of said first voltage controlled oscillator and a second voltage controlled oscillator of a second phase locked loop for use as said second local oscillator signal.

8. A method according to claim 7, wherein said first voltage controlled oscillator generates signals in a

first frequency band, wherein said second voltage controlled oscillator generates signals in a second frequency band, wherein a signal output by said first voltage controlled oscillator is used as said second local oscillator signal whenever a second local oscillator signal having a frequency selected from said first frequency band is required and wherein a signal output by said second voltage controlled oscillator is used as said second local signal whenever a second local oscillator signal having a frequency selected from said second frequency band is required.

9. A method according to claim 7, wherein said first voltage controlled oscillator generates signals having a first quality and said second voltage controlled oscillator generates signals having a second quality, said first quality being higher than said second quality, wherein a signal output by said first voltage controlled oscillator is used as said second local oscillator signal whenever a second local oscillator signal having said first quality is required, and wherein a signal output by said second voltage controlled oscillator is used as said second local oscillator signal whenever a second local oscillator signal having said second quality is required.

10. A method according to claim 7, wherein a signal output by said first voltage controlled oscillator and a signal output by said second voltage controlled oscillator are used alternately as said second local oscillator signal, said method further comprising setting a required frequency of a signal output by a

respective one of said voltage controlled oscillators  
before a signal output by said voltage controlled  
oscillator is used as said second local oscillator  
signal.

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11. A method according to claim 7, further comprising  
switching off at least one of said first voltage  
controlled oscillator and said second voltage  
controlled oscillator while a signal generated by  
10 said first voltage controlled oscillator or a signal  
generated by said second voltage controlled  
oscillator, respectively, is not to be used as one of  
said first local oscillator signal and said second  
local oscillator signal, and while the frequencies of  
15 signals currently generated by said first voltage  
controlled oscillator and said second voltage  
controlled oscillator are closer to each other than a  
predetermined difference.

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